



UNITED STATES PATENT AND TRADEMARK OFFICE

lh

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,749	04/13/2004	Akio Nakamura	OKI.621	4585

20987 7590 05/11/2006

VOLENTINE FRANCOS, & WHITT PLLC
ONE FREEDOM SQUARE
11951 FREEDOM DRIVE SUITE 1260
RESTON, VA 20190

EXAMINER

PHAM, HOAI V

ART UNIT	PAPER NUMBER
----------	--------------

2814

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/822,749

Applicant(s)

NAKAMURA, AKIO

Examiner

Hoai v. Pham

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 6-14, 16 and 22-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 15 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/13/04; 5/27/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Figs. 1-5 of claims 1-7, 15 and 17-21 in the reply filed on 2/22/2006 is acknowledged.

Specification

2. The abstract of the disclosure is objected to because the number elements contain in the abstract. Correction is required. See MPEP § 608.01(b).
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 5-7 and 15-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, lines 2-4, the limitation "wherein when the length between the first and second sides of the second semiconductor chip is defined as a chip length" renders the claim indefinite because the second semiconductor chip is defined in claim 3 that the surface of the second semiconductor chip has third and fourth sides.

Claim 15, lines 2-4, the limitation “a first semiconductor chip having a first surface and a second surface opposite to the first surface and **on which a first electrode section is formed**” renders the claim indefinite. It is not clear which surface (first or second) for a first electrode section is formed.

Claim 19, lines 2-3, the limitation “wherein when the length between the first and second sides of the second semiconductor chip is defined as a chip length” renders the claim indefinite because the second semiconductor chip is defined in claim 15 that the surface of the second semiconductor chip has third and fourth sides.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 15, and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mess et al. [U.S. 2002/0195697].

With respect to claim 1, Mess et al. (fig.12A, col. 4) discloses a semiconductor device comprising:

a die pad section (98) having a surface and a back surface;

a first semiconductor chip (60A) having a surface on which a first electrode section (54) is formed, and a back surface fixed to the surface of the die pad section (98);

a second semiconductor chip (60B) having a surface on which a second electrode section is formed, and a back surface fixed to the surface of the first semiconductor chip (60A);

lead terminal sections (102A, 102B) respectively electrically connected to the first and second electrode sections; and

a resin encapsulating body (84) that seals the die pad section, and the first and second semiconductor chips (see fig. 13), wherein an edge portion of the second semiconductor chip (60B) protrudes from an edge portion of the first semiconductor chip (60A), and an edge portion of the die pad section (98 or 70) protrudes from the edge portion of the first semiconductor chip.

With respect to claim 2, Mess et al. (figs. 12A and 13) discloses that the edge portion of the die pad section (98 or 70) further protrudes from the edge portion of the second semiconductor chip (60B).

With respect to claim 3, Mess et al. (fig. 12A) discloses the surface of the first semiconductor chip (60A) has first and second sides opposite to each other, the surface of the second semiconductor chip (60B) has third and fourth sides opposite to each other, the surface of the die pad section (98) has fifth and sixth sides opposite to each other, the fourth side of the second semiconductor chip (60B) protrudes from the second side of the first semiconductor chip (60A), and the sixth of the die pad section (98) protrudes from the fourth side of the second semiconductor chip (60B).

With respect to claim 4, Mess et al. (pp [0057]) discloses the first and second semiconductor chips (60A and 60B) are substantially identical in shape and size.

With respect to claim 15, as best understood, Mess et al. (fig. 12A, col. 4) discloses a semiconductor device comprising:

- a first semiconductor chip (60A) having a first surface and a second surface opposite to the first surface and on which a first electrode section is formed on the second surface, said second surface having a first side and a second side opposite to the first side;

- a second semiconductor chip (60B) having a third surface fixed onto the second surface, and a fourth surface opposite to the third surface and on which a second electrode section is formed, said fourth surface having a third side and a fourth side opposite to the third side;

- a die pad section (98) to which the first semiconductor chip is fixed, said die pad section having a first region to which the first surface is fixed, and a second region that protrudes from the second side;

- lead terminal sections (102A, 102B) respectively electrically connected to the first and second electrode sections; and

- a resin encapsulating body (84) that seals the die pad section, and the first and second semiconductor chips (see fig. 13), wherein the fourth side of the second semiconductor chip protrudes from the second side of the first semiconductor chip.

With respect to claim 17, Mess et al. (figs.12A and 13) discloses that the second region further protrudes from the fourth side of the second semiconductor chip (60B).

With respect to claim 18, Mess et al. (pp [0057]) discloses the first and second semiconductor chips (60A and 60B) are substantially identical in shape and size.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-7 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mess et al. [U.S. 2002/0195697].

Mess et al. (fig.12A, col. 4) discloses all the limitations as claimed above except the range of the protrudes and the thickness as claimed in claims 5-7 and 19-21. However, the thickness range would have been obvious to an ordinary artisan practicing the invention because, absent evidence of disclosure of criticality for the range giving unexpected results, it is not inventive to discover optimal or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). Furthermore, the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a

Art Unit: 2814


claim, the Applicant must show that the chosen dimensions are critical. See *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai v. Pham whose telephone number is 571-272-1715. The examiner can normally be reached on M-F.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


HOAI PHAM
PRIMARY EXAMINER